

WHAT IS CLAIMED IS:

1. Cap for a closure device designed to receive a sealing device which can be pierced and has at least one external surface with at least certain regions which can be inserted in an open end face of a housing container forming a sealing surface, with at least two coupling parts which are spaced apart from one another in the direction of a longitudinal axis and project out from an internal face of a cap casing in planes perpendicular to this longitudinal axis in the radial direction towards the longitudinal axis forming a locating region between them, and at least a first end which is open, wherein an internal clearance dimension, in particular an internal diameter of the first coupling part co-operating with the sealing surface is between 5 % and 25 % smaller than an external dimension, in particular an external diameter, of the sealing device to be located in the region of its sealing surface in the non-deformed or unclamped state.

2. Cap as claimed in claim 1, wherein at least one of the coupling parts is provided in the form of a web-type projection.

3. Cap as claimed in claim 2, wherein at least some of the individual projections of the first coupling part extend from the locating region towards the end remote therefrom in the direction of the first open end.

4. Cap as claimed in claim 1, wherein at least one of the coupling parts is provided in the form of a hollow cylindrical projection.

5. Cap as claimed in claim 1, wherein at least one additional retaining means for the sealing device is provided on the first coupling part co-operating with the sealing surface.

6. Cap for a closure device designed to receive a sealing device which can be pierced and has at least one external surface with at least certain regions which can be inserted in an open end face of a housing container forming a sealing surface, with at least two coupling parts joined thereto so as to be displaceable, which are spaced apart from one another in the direction of a longitudinal axis and project out from an internal face of a cap casing in planes perpendicular to this longitudinal axis in the radial direction towards the longitudinal axis forming a locating region between them, and at least a first end which is open, wherein at least one additional retaining means for the sealing device is provided on the first coupling part co-operating with the sealing surface.

7. Cap as claimed in claim 6, wherein the retaining means is provided in the form of one, but preferably several projections.

8. Cap as claimed in claim 6, wherein the retaining means projects in the direction towards the other coupling part.

9. Cap as claimed in claim 6, wherein the retaining means projects into the locating region.

10. Cap as claimed in claim 6, wherein the retaining means is or are dis-

posed at a distance apart on the first coupling part, extending from the internal surface in the direction of the longitudinal axis.

11. Cap as claimed in claim 10, wherein a first retaining surface of the retaining means directed towards the internal face extends substantially parallel with the internal face.

12. Cap as claimed in claim 6, wherein the retaining means is or are tapered, starting from the first coupling part.

13. Cap as claimed in claim 12, wherein another retaining surface of the retaining means directed towards the longitudinal axis extends at an angle in the direction towards the internal face starting from the first coupling part towards the other coupling part.

14. Cap as claimed in claim 6, wherein the retaining means is provided in the form of segments of tubular sections.

15. Cap as claimed in claim 6, wherein the retaining means is provided in the form of a continuously extending hollow cylindrical component.

16. Cap as claimed in claim 6, wherein at least one of the coupling parts is provided in the form of at least one web-type projection.

17. Cap as claimed in claim 16, wherein at least some of the individual

projections of the first coupling part extend from the locating region towards the end remote therefrom in the direction towards the first open end.

18. Cap as claimed in claim 6, wherein at least one of the coupling parts is provided in the form of a hollow cylindrical projection.

19. Sealing device for a closure device designed for retaining function in a locating region inside a cap, incorporating a sealing element having a sealing surface with at least certain regions which co-operate with an open end face of a housing container, from which at least one, preferably continuous flange-type shoulder projects radially outwards, the flange-type shoulder constituting a first end region and the sealing element constituting another end region, wherein at least one material split, such as a cut for example, is provided, extending from the first end region in the direction towards the other end region.

20. Sealing device as claimed in claim 19, wherein several material splits are provided.

21. Sealing device as claimed in claim 19, wherein the material splits extend at an angle to one another by reference to a plane extending perpendicular to the longitudinal axis.

22. Sealing device as claimed in claim 19, wherein the material splits intersect one another.

23. Sealing device as claimed in claim 19, wherein a longitudinal extension of the material split extends in a direction parallel with the longitudinal axis.

24. Sealing device as claimed in claim 19, wherein the material split terminates within it.

25. Sealing device as claimed in claim 19, wherein the material split extends across the major part of a distance between the two end regions.

26. Sealing device as claimed in claim 19, wherein at least some of the individual material splits link the two end regions with one another.

27. Sealing device as claimed in claim 19, wherein respective mutually facing cut faces of the material split sit in tight abutment with one another in the position inserted in the housing container.

28. Sealing device as claimed in claim 27, wherein respective mutually facing cut faces abut with one another in a gas-tight arrangement.

29. Sealing device as claimed in claim 27, wherein the respective mutually facing cut faces abut with another in a liquid-proof arrangement.

30. Sealing device as claimed in claim 19, wherein respective mutually facing cut faces of the material split are flat in at least certain regions.

31. Sealing device as claimed in claim 19, wherein respective mutually facing cut faces of the material split are profiled in at least certain regions.

32. Sealing device as claimed in claim 19, wherein a sealing means is introduced between at least certain regions of the cut faces of the material split.

33. Sealing device as claimed in claim 19, wherein a recess is provided in at least certain regions in a transition region between the flange-type shoulder and the sealing element, extending from the sealing surface in the direction towards the longitudinal axis.

34. Sealing device as claimed in claim 19, wherein it is made from a self-sealing, highly elastic material.

35. Sealing device as claimed in claim 34, wherein the material is selected from the group consisting of synthetic or thermoplastic elastomers.

36. Sealing device as claimed in claim 19, wherein at least one surface section is provided with a coating.

37. Sealing device as claimed in claim 36, wherein the coating is selected from the group consisting of silicone oils.

38. Sealing device as claimed in claim 36, wherein the coating is repellent to body fluids and/or cellular elements thereof.

39. Sealing device as claimed in claim 19, wherein it has at least one recess complementing the retaining means disposed in the cap.

40. Closure device for a housing container with one open end face, in particular for body fluids, wherein it is fitted with a cap as claimed in one of claims 1 to 18 and a sealing device as claimed in one of claims 19 to 39.

41. Closure device as claimed in claim 40, wherein the retaining means of the cap co-operates with the flange-type shoulder of the sealing device.

42. Closure device as claimed in claim 40, wherein the retaining means connects or connect positively with the sealing device, in particular the flange-type shoulder.

43. Closure device as claimed in claim 40, wherein the sealing device has at least one recess complementing the retaining means.

44. Closure device as claimed in claim 40, wherein a recess is provided in at least certain regions in a transition region between the flange-type shoulder and the sealing element, extending from the sealing surface in the direction towards the longitudinal axis, and the recess substantially complements the first coupling part in the cap.

45. Closure device as claimed in claim 44, wherein an external dimension of the recess in a plane perpendicular to the longitudinal axis is the same as or bigger in the radial direction than the clearance dimension, in particular the internal diameter, of

the first coupling part co-operating with the sealing surface.

46. Closure device as claimed in claim 40, wherein a retaining ring is provided in the locating region between the flange-type shoulder of the sealing device and the other coupling part of the cap at the end remote from the housing container.

47. Closure device as claimed in claim 46, wherein a thickness of the flange-type shoulder of the sealing device in the non-mounted state is bigger than a distance between the two coupling parts in the direction of the longitudinal axis less a thickness of the retaining ring.

48. Container system, in particular for body fluids, with a housing container having at least one open end face which is closed by a closure device as claimed in one of claims 40 to 47.

49. Container system as claimed in claim 48, wherein an internal clearance dimension, in particular a diameter, of the first coupling part co-operating with the sealing surface is the same as or smaller than an internal clearance width, in particular an internal diameter, of the housing container in the region of its open end face.

50. Container system as claimed in claim 49, wherein the internal clearance dimension, in particular the diameter, is between 0 % and 30 % smaller than the internal clearance width, in particular the internal diameter, of the housing container in the region of its open end face.